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EXAMINER	
MISLEH, JUSTIN P	

ART UNIT	PAPER NUMBER
2612	9

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/399,866	NEEDHAM, BRADFORD H.	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 2, 4, 6, 7, and 9 - 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7 and 11 - 20* is/are allowed.

6)☒ Claim(s) *1,2,4 and 6* is/are rejected.

7)☒ Claim(s) *4,9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 September 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 26 January 2004 have been fully considered but they are not persuasive.

2. The Applicant argues, "Specifically, Kim does not disclose a third motion detection algorithm that compares the current image to a stable frame."

3. Kim simply teaches of a video surveillance camera connected to a computer wherein a currently captured image is compared to a previously captured image to detect changes in luminance in each pixel. If the difference in the pixel luminance changes from image to image then the image in which the changes were detected is selected for permanent storage. Kim uses three image buffers, of which include a current image buffer, a previous image buffer, and a candidate buffer, to operate the surveillance system. The current image buffer (212) captures a current image and in conjunction with the control unit (216) calculates luminance values for each pixel in the current image. The previous image buffer (214) stores a previous image, which is the image captured just prior to the current image, and in conjunction with the control unit calculates luminance values for each pixel in the previous image. The pixel luminance values from both the current image (stored in the current image buffer 212) and the previous image (stored in the previous image buffer 214) are compared to each other and if the difference in pixel luminance values exceeds a particular predetermined threshold (Second Threshold N; step 308 in Figure 4), the current image is selected for permanent storage in the candidate buffer (218). Regardless if the current image is selected for permanent storage, it is always stored in

the previous image buffer (214) to become the previous image for the next current image. If a current image is selected for permanent storage, the time period between successive image capture (Δt) is increased ($\Delta t = t_2$) and if it is not selected for permanent storage, the time period (Δt) is slowed ($\Delta t = t_1$). The slowing of the time period between successive image capturing ($\Delta t = t_1$) is the surveillance system's method of recognizing stable image frames (i.e. no motion is being detected and, therefore, it is not necessary to capture images more frequently) and, likewise, increasing the time period between successive image capture ($\Delta t = t_2$) is the surveillance system's method of recognizing recent motion image frames (i.e. motion is being detected and, therefore, it is necessary to capture images more frequently).

As shown in figure 4, the surveillance system of Kim operates according to the steps in a flow chart. In step 304, the difference in pixel luminance values from both the current image (stored in the current image buffer 212) and the previous image (stored in the previous image buffer 214) are calculated. In step 306, the number of pixel luminance values, calculated in step 304, that exceed a first predetermined threshold (First Threshold K) are counted. In step 308, the counted pixel luminance values, counted in step 306, are compared to a second predetermined threshold (Second Threshold N). Should the counted pixel luminance values, counted in step 306, fall below the second predetermined threshold (Second Threshold N), flow moves to step 402, wherein the time period between successive image capture (Δt) is slowed ($\Delta t = t_1$). Should the counted pixel luminance values, counted in step 306, exceed the second predetermined threshold (Second Threshold N), flow moves to steps 310 and 404, wherein the current image is stored in permanent storage (218) and the time period between successive image capture (Δt) is increased ($\Delta t = t_2$). As stated above, if the time period between successive image capture (Δt) is

slowed ($\Delta t=t_1$), the next image captured (t_1 = time since the previous image was captured) is a stable image frame, hence, no motion is being detected and, therefore, it is not necessary to capture images more frequently. Also as stated above, if the time period between successive image capture (Δt) is increased ($\Delta t = t_2$), the next image captured (t_2 = time since the previous image was captured) is a recent motion image frame, hence, motion is being detected and, therefore, it is necessary to capture images more frequently.

Therefore, it is clear that Kim discloses three motion detection algorithms:

o In every cycle of Kim, according to the flowchart of figure 4, the difference in pixel luminance values between successive image frames and a current image frame are compared to a predetermined threshold (First Threshold K), in step 306. And in every cycle of Kim, according to the flowchart of figure 4, the number of pixels luminance values that exceed a predetermined threshold (First Threshold K) are counted, also in step 306. Thus, Kim discloses, as required, a *first motion detection algorithm* capturing a current image frame when a pixel comparison between successive image frames exceeds a predetermined threshold. According to the Examiner's interpretation of Kim, the first motion detection algorithm begins with every image capture.

o As determined from the *first motion detection algorithm*, the predetermined threshold (First Threshold K) is introduced in step 306. Also, as stated above, that if the time period between successive image capture (Δt) is slowed ($\Delta t=t_1$), the next image captured (t_1) is a stable image frame because no motion is being detected and, therefore, it is not necessary to capture images more frequently. As stated above, according to the Examiner's interpretation of Kim, the *first motion detection algorithm* begins with every image capture and when the time period

between successive image capture is slowed, the next image captured (which will be a stable frame) does not take place until a time period equal to t_1, which equals the time since the previous image was captured. Thus, Kim discloses, as required, a *second motion detection algorithm* capturing a stable frame after a certain duration (t_1) has lapse since the predetermined threshold (First Threshold K) has been exceeded.

o Finally, as discussed above, if the time period between successive image capture (Δt) is increased ($\Delta t = t_2$), the next image captured (t_2) is a recent motion image frame because motion is being detected and, therefore, it is necessary to capture images more frequently. The time period between successive image capture is increased in step 404, after the difference in pixel luminance values between a stable image frame (that captured when $\Delta t = t_1$) and a current image frame are compared and exceed a second predetermined threshold (Second Threshold N). Thus, Kim discloses, as required, a *third motion detection algorithm* capturing a recent motion frame when a pixel comparison between the current image frame and the stable frame exceeds a predetermined threshold.

In conclusion, Kim discloses a *first motion detection algorithm* that begins with every image capture, a *second motion detection algorithm* that captures a stable image frame at a point when the time period between successive image capture is slowed, and a *third motion detection algorithm* that captures a recent motion frame that causes a time period between successive image capture to be increased.

Claim Objections

4. **Claim 4** is objected to because of the following informalities: disagreement with parent Claim 1.

Claim 1 requires in relation to the first motion detection algorithm, "a predetermined threshold". Claim 1 also requires in relation to the second motion detection algorithm, "the predetermined threshold". Claim 1 further requires in relation to the third motion detection algorithm, "a predetermined threshold". These requirements suggest to the Examiner, that a first predetermined threshold is introduced in and required for the first motion detection algorithm and depended upon by the second motion detection algorithm. Furthermore, the third motion detection algorithm uses "a predetermined threshold" which, although not required by claim language, but interpreted by the Examiner, as such for the purposes of examination, as another predetermined threshold or rather a second predetermined threshold.

In Claim 4, the Applicant further limits aspects of the third motion detection algorithm by requiring the capturing of a "recent motion frame that occurs a predetermined time period prior to the occurrence of a stable frame" and limits the aspects of the "stable frame" by requiring that the "stable frame" occurs "after a certain duration has elapsed since the predetermined threshold has been exceed. Since, the Applicant introduces two "predetermined thresholds", as interpreted by the Examiner above, it is unclear as to which predetermined threshold the Applicant is referring to. In other words, the predetermined threshold associated with the third motion detection algorithm and the predetermined threshold associated with the first and second motion detection algorithms is not distinguished between in Claim 4. For the purposes of examination, the Examiner will interpret the instance of "predetermined threshold" in Claim 4, as the

"predetermined threshold" associated with the first and second motion detection algorithms as required in Claim 1.

Appropriate correction is required.

5. **Claims 9 and 10** are objected to because of the following informalities: duplicate claim language.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Claims 1, 2, 4, and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim.

8. For **Claim 1**, Kim discloses, as discussed above, as shown in figures 2, 3, and 4, and as stated in columns 2 (lines 41 – 67), 3, and 4 (lines 1 – 31), a camera system for downloading pictures to a computer (220) comprising: a video camera (222); a processor (216) that selects images captured by the video camera in accordance with a plurality of motion detection algorithms (see arguments above; more specifically each of those beside each of the three clear bullets, respectively), a first motion detection algorithm capturing a current image frame when a pixel comparison between successive image frames exceeds a predetermined threshold (First Threshold K), a second motion detection algorithm capturing a stable frame after a certain

duration (that is captured when $\Delta t=t_1$) has lapsed since the predetermined threshold (First Threshold K) has been exceeded, and a third motion detection algorithm capturing a recent motion frame (that is captured when $\Delta t=t_2$) when a pixel comparison between the current image frame and the stable frame exceeds a predetermined threshold (Second Threshold N).

However, Kim does not disclose the camera and computer being a combination web camera system nor does Kim disclose the ability to uploads the candidate images to a web site. Official Notice is taken that both the concepts and the advantages of providing a camera and computer as a web camera system and uploading the candidate images are well known and expected in the art. It would have been obvious for Kim to provide a web camera system with candidate image upload a means for remote image viewing as in surveillance systems.

9. As for **Claim 2**, corresponding to the Official Notice taken in regards to Claim 1, it is inherent to a web based data transfer system to upload and download information at programmed intervals, hence, the theory behind packet data transfer.

10. As for **Claim 4** (please see objection above), Kim discloses, a third motion detection algorithm that captures a recent motion frame (that is captured when $\Delta t=t_2$) the occurs a predetermined time period prior to the occurrence of a stable frame (this feature is arbitrary; see explanation below), the stable frame (that is captured when $\Delta t=t_1$) occurring after a certain duration has elapsed since the predetermined threshold (First Threshold K) has been exceeding.

The Applicant requires that a captured recent motion frame occurs a predetermined time period prior to the occurrence of a stable frame. In Kim, every image captured will be either a stable image frame or a recent motion image. A stable image frame is captured, based upon the comparison of a recent motion frame and a previous captured image or based upon the

comparison of a stable image and a previous captured image and, at a point when the time period between successive image capture is slowed and a recent motion frame is captured, based upon the comparison of a stable image frame and a previous captured image or based upon the comparison of a recent motion frame and a previous captured image and causes a time period between successive image capture to be increased.

11. As for **Claim 6**, Kim discloses, wherein the processor (216) includes a circular buffer (218) to successively store motion-captured images in image frames in which the predetermined threshold is exceeded. The permanent image storage unit is the candidate buffer, which stores only images in which motion has been detected.

Allowable Subject Matter

12. **Claims 7 and 11 – 20** are allowed. The following is a statement of reasons for the indication of allowable subject matter:

For **Claim 7**, the closest prior art (Kim) teaches of a camera and computer system comprised of three image buffers for a current, previous, and candidate image wherein a single mode of a plurality of modes is determined by a user by means of selecting the number of pixels used in determining whether or not motion exists in a single image, the closest prior art does not teach or suggest a mode of operation wherein the buffer for storing the candidate images is loaded with the current image after a certain duration has elapsed following the assertion of a motion signal.

For **Claims 11, 15, and 19**, the closest prior art (Kim) teaches of a camera and computer system comprised of three image buffers for a current, previous, and candidate image wherein a

single mode of a plurality of modes is determined by a user by means of selecting the number of pixels used in determining whether or not motion exists in a single image, however, the closest prior art does not teach or suggest selecting from the candidate image buffer a certain image as the candidate picture for uploading to a web site after no motion as been detected for a certain duration of time.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
MARCH 5, 2004

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